# SAN GORGONIO PASS WATER AGENCY
# 1210 Beaumont Avenue, Beaumont, CA
# Board of Directors Engineering Workshop
# Agenda
# March 9, 2015 at 1:30 p.m.

**Teleconference Location: 10213 Overland Trail**
**Cherry Valley, CA 92223**

1. **Call to Order, Flag Salute and Roll Call**

2. **Public Comment**
   Members of the public may address the Board at this time concerning items relating to any matter within the Agency's jurisdiction. To comment on specific agenda items, please complete a speaker's request form and hand it to the board secretary.

3. **Discussion of SWP Final Delivery Reliability Report* (Page 2)**

4. **Discussion of SGMA Groundwater Basin Boundaries and Agency Implications* (Page 55)**

5. **Demonstration of Online DWR Water Management Tool**

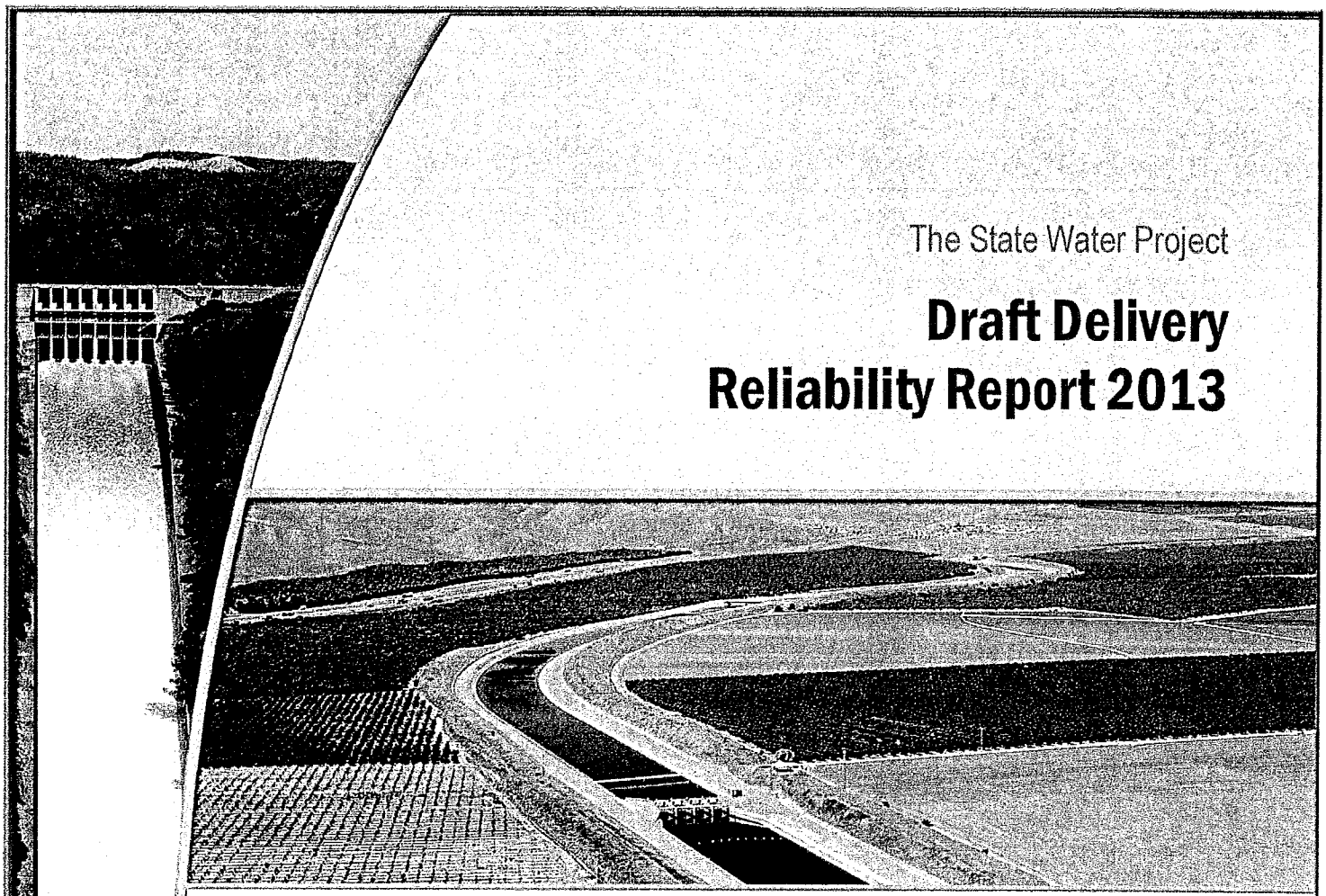
6. **Announcements**

   A. Board of Directors Meeting, March 16, 2015 at 1:30 p.m.
   B. Finance and Budget Workshop, March 23, 2015 at 1:30 p.m.
   C. San Gorgonio Pass Regional Water Alliance – Technical Committee Meeting, March 25, 2015 at 4:30 p.m. - Banning City Hall Conference Room
   D. San Gorgonio Pass Regional Water Alliance – Committee Meeting, March 25, 2015 at 6:00 p.m. - Banning City Council Chambers

7. **Adjournment**

*Information included in Agenda Packet

(1) Materials related to an item on this Agenda submitted to the Board of Directors after distribution of the agenda packet are available for Public inspection in the Agency's office at 1210 Beaumont Avenue, Beaumont during normal business hours. (2) Pursuant to Government Code section 54957.5, non-exempt public records that relate to open session agenda items and are distributed to a majority of the Board less than seventy-two (72) hours prior to the meeting will be available for public inspection at the Agency's office, located at 1210 Beaumont Avenue, Beaumont, California 92223, during regular business hours. When practical, these public records will also be made available on the Agency's Internet Web site, accessible at http://www.sgpwa.com." (3) Any person with a disability who requires accommodation in order to participate in this meeting should telephone the Agency (951 845-2577) at least 48 hours prior to the meeting in order to make a request for a disability-related modification or accommodation.



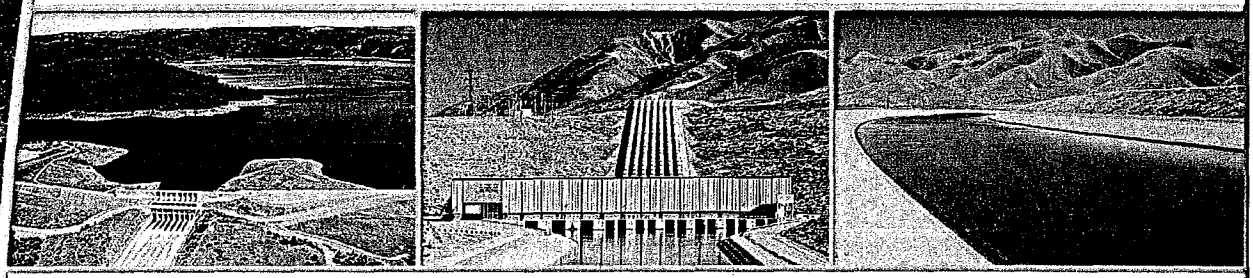
The State Water Project

# Draft Delivery Reliability Report 2013

December 2013

State of California
Natural Resources Agency
Department of Water Resources

# Summary



This report is intended to inform the public about key factors important to the operation of the State Water Project (SWP) and the reliability of its water deliveries.

For many SWP water contractors, water provided by the SWP is a major component of the water supplies available to them. SWP contractors include cities, counties, urban water agencies, and agricultural irrigation districts. These local utilities and other public and private entities provide the water that Californians use at home and work every day and that helps to nourish the state's bountiful crops. Thus, the availability of water from the SWP is an important component to the water supply planning of its recipients and ultimately affects the amount of water that local residents and communities can use.

The availability of these water supplies may be highly variable. A wet water year may be followed by a dry or critically dry year. Knowing the probability that they will receive a certain amount of SWP water in a given year—whether it be a wet water year, a critical year, or somewhere in between—gives contractors a better sense of the degree to which they may need to implement increased conservation measures or plan for new facilities.

The Delta is the key to the SWP's ability to deliver water to its agricultural and urban contractors. All but five of the 29 SWP contractors receive water deliveries from the Delta (pumped by either the Harvey O. Banks or Barker Slough pumping plants).

Yet the Delta faces numerous challenges to its long-term sustainability. For example, climate change poses the threat of increased variability in floods and droughts, and sea level rise complicates efforts to manage salinity levels and preserve water quality in the Delta so that the water remains suitable for urban and agricultural uses. Among the other challenges are continued subsidence of Delta islands, many of which are already below sea level, and the related threat of a catastrophic levee failure as water pressure increases on fragile levees.

Protection of endangered and threatened fish species, such as the delta smelt, is also an important factor of concern for the Delta. Ongoing regulatory restrictions, such as those imposed by federal biological opinions on the effects of SWP and Central Valley Project (CVP) operations on these species, also contribute to the challenge of determining the SWP's water delivery reliability.

Two large-scale plans for the Delta that are being developed could affect SWP water delivery reliability: the Delta Plan and the Bay Delta Conservation Plan (BDCP). When complete, the BDCP will provide the basis for issuing endangered species permits to operate the SWP and CVP. The BDCP seeks to improve the health of the ecological system as a whole.

The analyses in this report factor in all of the regulations governing SWP operations in the Delta and upstream, and assumptions about water uses in the upstream watersheds. Analyses were conducted that considered the amounts of water that SWP contractors use and the amounts of water they choose to hold for use in a subsequent year.

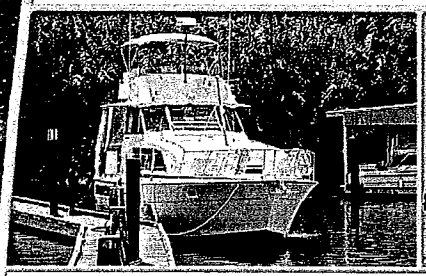
Many of the same specific challenges to SWP operations described in the *State Water Project Delivery Reliability Report 2011* (2011 Report) remain in 2013. Most notably, the effects on SWP pumping caused by issuance of the 2008 and 2009 federal biological opinions (BOs), which were reflected in the 2011 Report, continue to affect SWP delivery reliability today. The analyses in this report consider climate change and the effects of sea level rise on water quality, but do not incorporate the probability of catastrophic levee failure. The differences between the 2011 and 2013 Reports can be attributed primarily to updates in the assumptions and inputs to the computer simulation analyses.

As noted in the discussion of SWP exports in Chapter 4 of this report, estimated average annual Delta exports (that is, SWP water of various types pumped by and transferred to contractors from the Banks Pumping Plant) have decreased since 2005, although the bulk of the change occurred by 2009 as the federal BOs went into effect, restricting operations. These effects are also reflected in the SWP delivery estimates provided in Chapters 5 and 6 of this report. Chapters 5 and 6 characterize the SWP's water delivery reliability under existing conditions and future conditions, respectively. The most salient findings in this report are as follows:

- The estimated average annual SWP exports decrease from 2,612 thousand acre-feet (taf)/year to 2,466 taf/year (146 taf/year or about 5.6%) between the existing- and future-conditions scenarios.
- Under existing conditions, the average annual delivery of Table A water estimated for this 2013 Report is 2,553 taf/year, 29 taf (1%) more than the 2,524 taf/year estimated for the 2011 Report.
- Under future conditions, the average annual delivery of Table A water estimated for this 2013 Report is 2,400 taf/year, about 1% less than the 2,465-taf/year estimate for the future-conditions scenario presented in the 2011 Report.
- The likelihood of existing-condition SWP Article 21 deliveries (supplemental deliveries to Table A water) being greater than 20 taf/year has decreased relative to the likelihood presented in the 2011 Report. The same can be said for the estimated likelihood of Article 21 deliveries greater than 20 taf/year under future conditions. Both this report and the 2011 Report show a likelihood ranging between 21% and 26% of Article 21 water deliveries greater than 20 taf/year under both existing and future conditions.

# Chapter 1

## Water Delivery Reliability: A Concern for Californians



California's water supplies are crucial to maintaining a high quality of life for the state's residents. The State Water Project (SWP), operated by the California Department of Water Resources (DWR), is an integral part of the effort to ensure that business and industry, urban and suburban residents, and farmers throughout much of California have sufficient water at all times.

Local water agencies in the southern Central Valley's farming areas and in Southern California's urban-industrial regions have undertaken major efforts to increase their self-sufficiency and reduce their reliance on imported sources of water supply. Implementing measures to conserve and recycle water, increase water-use efficiency, and improve the use of groundwater basins has helped local water districts to manage better in dry years, when only limited water supplies are available to import into their service areas.

Despite these efforts, water deliveries by the SWP continue to play an indispensable role in supplying water to meet major portions of the demands in the SWP service areas in the southern San Francisco Bay area, Kern County, the Tulare Lake basin, and Southern California. Thus, the reliability of SWP water deliveries is a vital component of California's economic growth and quality of life.

This *State Water Project Delivery Reliability Report 2013* (2013 Report) describes the expected existing and future SWP water deliveries to its service areas. The term "water delivery reliability," as used in this report, is defined as the annual amount of SWP water that can be expected to be delivered with a certain frequency—that is, the likelihood (probability) that a certain amount of water will be delivered by the SWP in a year.

### Reasons to Assess SWP Water Delivery Reliability

Two major factors underscore the importance of assessing the SWP's water delivery reliability: the effects of population growth on California's balance of water supply and demand, and State legislation intended to help maintain a reliable water supply.

### Population Growth, Land Use, and Water Supply

California's population has grown rapidly in recent years, with resulting changes in land use. This growth is expected to continue. From 1990 to 2005, California's population increased from about 30 million to about 36.5 million. Based on this trend, California's population has been projected to be more than 47.5 million by 2020. The "current trends" scenario depicted in the *California Water Plan 2013* for year-2050 conditions, based on the California Department of Finance's projections of 2010 U.S. Census data, assumes a population of nearly 51 million—a 75% increase in the 1990 population.

The amount of water available in California—or in different parts of the state—can vary greatly from year to year. Some areas may receive 2 inches of rain a year, while others are deluged with 100 inches or more. As land uses have changed, population centers have emerged in many locations without sufficient local water supplies. Thus, Californians have always been faced with the problem of how best to conserve, control, and move water from areas of abundant water to areas of water need and use.

Population growth and resulting development in California since World War II have been substantial, fueling the need for increased water supply.

### Legislation on Ensuring a Reliable Water Supply

The laws described below impose specific requirements on both urban and agricultural water suppliers. These laws increase the importance of SWP water delivery reliability estimates to water suppliers.

#### California Urban Water Management Planning Act

The California Urban Water Management Planning Act was enacted in 1983. As amended, this law (California Water Code, Sections 10610–10656) requires urban water suppliers to adopt water management plans every 5 years and submit those plans to DWR. DWR is required to review local water management plans and report on the status of these plans. DWR published a guidebook to preparing urban water management plans in March 2011. Guidance documents are available at http://www.water.ca.gov/urbanwatermanagement.

Adoption of the most recent (2010) round of urban water management plans was required by July 1, 2011; the plans were due to DWR by August 1, 2011. The municipalities and water districts that have adopted these plans and submitted them to DWR in 2011, 2012, and 2013 are listed at http://www.water.ca.gov/urbanwatermanagement/2010uwmps/.

#### Water Conservation Act

The Water Conservation Act of 2009 (Senate Bill X7.7, Steinberg), enacted in November 2009, includes distinct requirements related to both urban and agricultural water use.

This law requires that the State of California reduce urban per capita water use statewide by 10% by the end of 2015 and 20% by the end of 2020. DWR is required to report on progress toward meeting these urban per capita water use goals.

In addition, as part of the Water Conservation Act, agricultural water suppliers with 25,000 acres or more of irrigated land were required to prepare and adopt agricultural water management plans and submit the plans to DWR by the end of 2012. In November 2012, DWR

released a guidebook for developing agricultural water management plans: http://www.water.ca.gov/wateruseefficiency/sb7/docs/AgWaterManagementPlanGuidebook-FINAL.pdf.

Water agencies filing agricultural water management plans as of July 2013 are listed on a Web page maintained by DWR's Water Use and Efficiency Branch: http://www.water.ca.gov/wateruseefficiency/sb7/docs/2012_AWMPs_Received_07-16-2013.pdf.

DWR is reviewing these plans for consistency with Water Conservation Act requirements. The plans must be updated by the end of 2015 and every 5 years thereafter.

## Background of This Report

This 2013 Report is the sixth in a series of reports on the SWP's water delivery reliability. DWR is legally required to prepare and distribute this report every 2 years to all SWP contractors (recipients of SWP water), city and county planning departments, and regional and metropolitan planning departments in the SWP's service area. Reports were previously produced for 2002, 2005, 2007, 2009, and 2011.

The requirement for a biennial water delivery reliability report was established in a settlement agreement among the Planning and Conservation League, DWR, SWP contractors, and others that was approved by the 3rd Circuit Court of Appeals in May 2003. The settlement agreement was reached in the aftermath of the "Monterey Amendments" case, which resolved a dispute about the environmental analysis of amendments to the long-term water supply contracts for the SWP that were entered into by DWR and most of the SWP contractors in the 1990s. The terms of the SWP contracts were amended after water shortages during the 1987–1992 drought drastically reduced SWP water deliveries to SWP contractors in the San Joaquin Valley and Southern California.

Attachment B to the settlement agreement specifies that each SWP delivery reliability report must include the following information:

- the overall water delivery capacity of the SWP facilities at the time of the report;
- the allocation of that SWP water to each SWP contractor;
- a discussion of the range of hydrologic conditions, which must include the historic extended dry cycle and long-term average; and
- the total amount of SWP water delivered to all contractors and the amount of SWP water delivered to each contractor during each of the 10 years immediately preceding the report.

DWR's water delivery reliability reports are used by various entities for water planning purposes. The reports must be presented in a format understandable by the public. The information presented in the reports is intended to help local agencies, cities, and counties that use SWP water to develop adequate, affordable water supplies for their communities.

## Contents and Use of This Report

The following topics are addressed in this 2013 Report:

- The Summary at the front of this report briefly summarizes the updated findings on water delivery reliability detailed in proceeding chapters.
- Chapter 1, "Water Delivery Reliability: A Concern for Californians," summarizes important issues (including selected State legislation) that underlie the need to assess the SWP's water delivery reliability and provides background on DWR's water delivery reliability reports.
- Chapter 2, "State Water Project and Water Delivery Contracts," describes the SWP's purpose, background, facilities, and SWP water contracts and contractors.

- Chapter 3, "Factors that Affect Water Delivery Reliability," explains generally how water delivery reliability is calculated. The chapter then describes a variety of factors that make forecasting water delivery reliability inherently challenging, such as:
  - water availability at the source,
  - water rights with priority over the SWP,
  - climate change,
  - regulatory restrictions on SWP Delta exports,
  - ongoing environmental and policy planning efforts, and
  - Delta levee failure.
- Chapter 4, "SWP Delta Exports," discusses how the delivery estimates for the SWP have been reduced as a result of more restrictive operational rules. This chapter also presents the results of DWR's analysis of SWP exports from the Harvey O. Banks Pumping Plant for existing conditions (2013) and future conditions (2033).
- Chapter 5, "Existing SWP Water Delivery Reliability (2013)," estimates the SWP's delivery reliability for existing conditions (2013) and compares these estimates with the existing-condition results presented in the *State Water Project Delivery Reliability Report 2011* (2011 Report).
- Chapter 6, "Future SWP Water Delivery Reliability (2033)," estimates the SWP's delivery reliability for conditions 20 years in the future (2033), reflecting potential hydrologic changes that could result from climate change. This chapter also compares these estimates with the future-condition results presented in the 2011 Report.
- Appendix A, "Historical SWP Delivery Tables for 2003–2012," presents the historical deliveries for SWP contractors over the last 10 years.

In addition, a technical addendum prepared for this report includes more specific details of the technical analyses and results. The technical addendum also describes the computer simulation assumptions and lists the updates to the computer model since the 2011 Report. The technical addendum is available upon request and is posted online, along with this 2013 Report, at http://baydeltaoffice.water.ca.gov.

Urban and agricultural water suppliers can use the information in this report and the technical addendum when they prepare or amend their water management plans. These details will help them decide whether they need new facilities or programs to meet future water demands. Urban water suppliers can also use this information when, as required by the California Environmental Quality Act (CEQA), they analyze whether enough water is available for proposed subdivisions or development projects.